PART II

1.0 CURRENT REVIEW

1.1 INTRODUCTION AND GOALS OF THE CONFERENCE

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There has been a considerable advance in the knowledge on cholera during the past two decades. This includes a precise idea of how the disease is mediated in the body of the host, highly effective treatment which is inexpensive, and much information about basic bacterial genetics and physiology of *Vibrio cholerae* itself. Prevention of cholera, however, has rested entirely on our ability to restrict contamination of food and water used by populations at risk. Although cholera vaccines have been found to have some effect, particularly in children in endemic areas, for a brief period of time, vaccines sufficiently effective to be practical where cholera is a big problem in developing countries, have not been achieved.

Several promising pathways have been opened up which may lead to a vaccine sufficiently effective to be practical for a field study. Adjuventing of antigens has shown improvement in protection of the classical vaccine and needs to be further explored in relation to parenteral vaccine preparation of any kind. Purification of specific components of *Vibrio cholerae* including the toxin, factors which determine association with gut epithelium, and other surface components have been separated, some purified, and in the case of toxins developed into candidate vaccines. Complementing this advance in information and materials available from the organism itself has been an increased knowledge of local immune mechanisms of the gut. Clearly such knowledge is still in an embryonic stage, however, perhaps it is sufficiently advanced to allow us to make some judgements in respect to the interaction of vaccine candidates with the local immune system of this organ. This raises the additional consideration of whether vaccines should be given by injection or by mouth or whether the methods may in some way be complementary.

The goal of this meeting is to review the current state of knowledge relevant to cholera vaccine and to define directions for further work which may bring an effective vaccine to field testing in a careful and systematic way to achieve the ultimate purpose, a highly protective and safe vaccine to prevent cholera in man.